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Client: Town of Lexington | Engineering Division

June 3, 2014

Location: Concord Avenue, Lexington

ATTN: David Cannon, PE

David,

The following report was prepared based upon the inspection of the physical condition and overall health of 39 street trees along Concord Avenue detailed on sidewalk construction plans prepared by MDM Transportation Consultants, Inc.

The inspection of the trees included:

Visual inspection of the trees along Concord Avenue was in large part conducted from the ground and with the use of a man lift where necessary to further inspect structural deficiencies and hazards. The inspection process was recorded via hand written notes and photo documentation.

Core sampling and air tools were not necessary in the course of this evaluation.

All the trees inspected were grouped based on their associated street address location and formatted with corresponding images.

Twenty-one (21) of the total 39 trees inspected were determined to be in the worst shape are detailed below.

- **#396 Concord Avenue (corner of Hampton Road) - White Ash (36")**
 - Root flare buried.
 - Several large cavities.
 - Decay in main stem.
 - Major dead wood.



#440 Concord Avenue – Double Lead Cherry (14”), Cherry (12”), Maple (14”), and Double Lead Cherry (12”)

- Double Lead Cherry (14”) – Root flare buried, one leader with broken top, bittersweet climbing trunk, multiple cavities, dead wood and stubs



- Cherry (12”) – Root flares buried, top dead, dead wood, stubs and cavities



- Maple (14”) – Root flare exposed, contorted stem, cavities both side of stem, dead wood, and stubs



- Double Lead Cherry (12”) – Root flare partially exposed, contorted stem leaning over street, decay in main stem, cavities and dead wood



- **#464 Concord Avenue - Black Oak (30”)**

- Decay in main stem near root flare on road side.
- Major dead with fruiting bodies.
- 10” leader growing out near base.



- **#464 Concord Avenue - Cherries (2, 10" stems)**

- First stem is broken off at the top with the bark peeling off.
- Second stem – root flare partially exposed.
- Major cavity.
- Canopy growing between utility lines.
- Ivy growing on stem.



- **#476 Concord Avenue - Norway Maple clump (13" stems)**

- Root flares buried.
- Growing through utility lines.
- Dead wood.



- **#2 Barberry Road - White Oak (42")**

- Root flare buried.
- Large storm damage tear outs on both sides of main stem.
- Dead wood over roadside of canopy.



- **#2 Barberry Road - White Oak (24")**

- Root flare buried.
- Co-dominate stem.
- Dead wood.
- Rear stem leaning toward hose.



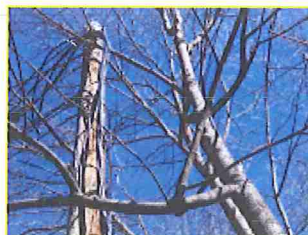
- **#2 Barberry Road - Ash (2, 10" stems)**

- Root flare partially exposed.
- Stems wrapped in bittersweet vines
- Co-dominate stem.
- Dead wood/hangers.



- **#2 Barberry Road - Maple (7" stem)**

- Root flare buried.
- Tangled in utility pole.
- Top broken out.



- **#510 Concord Avenue - Maple (18")**
 - Root flare buried.
 - Two main leaders.
 - First lead has broken top
 - Second lead is growing through the primaries



- **#516 Concord Avenue – Oak (55")**
 - No root flare.
 - Large cavity main stem.
 - Decay.
 - Many poor pruning cuts/stubs.



- **#524 Concord Avenue - Oak (38")**
 - Flare exposed but compromised near street and rear wall.
 - Significant dead wood.
 - Barb wire embedded in main stem.



- **#524 Concord Avenue - Hickory (8")**
 - Flare partially buried.
 - Lean in main stem over road.
 - Small dead wood.

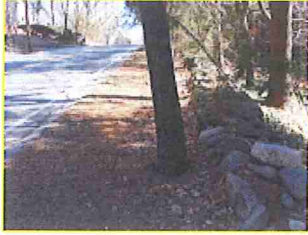


- **#524 Concord Avenue - Oak (42")**
 - Flare compromised, huge vertical stress crack in main stem, surface roots cut on both street and driveway side, large cavity in leader over street. – Tree in very bad shape.



- **#542 Concord Avenue - Oak (8")**

- Root flare partially buried.
- Dead wood.
- Crown damage from storm damage tear out.
- Poor pruning cuts and chip outs.



- **#556 Concord Avenue – Elm (14"), Oak (22") and Oak (36")**

- Elm (14") – Dead with poison ivy vine on main stem and top broken out.



- Oak (22") – Partially buried root flare, poison ivy vine throughout stem canopy, lower branches in utility lines and minor dead wood.



- Oak (36") – Flare partially buried, large 10" dead wood, large broken stub over road and no decay present.



The visual inspection of the 39 street trees located along the side of Concord Avenue yielded the following information:

- Twenty-one (21) trees of the 39 that were inspected (54%) were determined to be dead or in poor condition with structural deficiencies including:
 - Buried flares.
 - Hollows/cavities.
 - Cracks and fractures.
 - Co-dominate stems.
 - Included bark.
 - Decay.
 - Significant large dead wood.

Many of these trees have several structural deficiency characteristics which mark them either as hazards and candidates for immediate removal or will shortly become hazards due to the existing site conditions which have begun to impact the health of these trees.

The higher percentage of trees in poor condition and with structural deficiencies may be due to a more mature tree collection that is not aging gracefully due to the environment and lack of proper care. Approximately 50% of the trees evaluated registered a 14" dbh or greater.

- The remaining 18 trees of the 39 inspected (46%) were determined to be in good condition and structurally sound.

In addition, those trees found to be in good shape and structurally sound might be further influenced by

- The trees inspected were probably volunteers which self-seeded over time. Avoiding the clonal monoculture which plagues many landscapes
- The diversity of trees present, 9 different genera represented, handle stress and a wide array of environmental factors differently

The trees that were determined to be in good shape and structurally sound do require attention to address items like pruning, girdling roots, minor grade changes and trunk flare problems before these issues begin to impact the health of the trees.

Respectfully submitted:

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